

Cyberpunks hate you

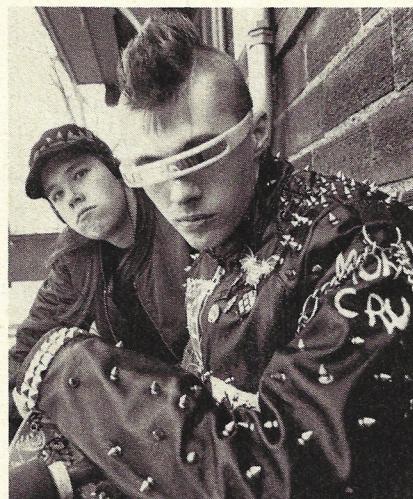
America's newest lost generation mixes youthful rage and technological terrorism

Today's cyberpunks aren't the first young generation to be pissed off about the state of the world, but they're the first with the technical know-how to do something about it. They're mad as hell and they can tap into your bank account electronically—or so say St. Vitus and Kid Thalidomide in our lead article by Julie Caniglia from the Minneapolis weekly *City Pages*. Looking beyond their technothuggery, it's not hard to feel sorry for these rebels with a modem as they face a bleak economic and social future. In other articles, A.J.S. Rayl chronicles the rise of cyberspace, and Gareth Branwyn outlines what influence the emerging computer counterculture will have on our society.

I meet Kid Thalidomide and St. Vitus for the first time at Pop's Video Arcade in downtown Minneapolis. They bum a buck from me for tokens and play a couple games of *The Simpsons*; after several minutes of button bashing, they make numbers one and five on the high-score list. I ask if they ever play pinball, and they're shocked. "Pinball! That's for fuckin' dinosaurs," Kid sniffs contemptuously.

I've committed the first of many gaffes in navigating the world of cyberspace—the computer-age underground.

Don't call them hackers, either. "Hacking just conjures up *old* visions of '60s long-haired people sitting at a huge mainframe," explains St. Vitus. "They'd spend five minutes typing in machine language programs to play tic-tac-toe." Often called info wimps and technohippies by cyberpunks, the hackers who emerged out of the '70s computer culture believe that



Meet St. Vitus (left) and Kid Thalidomide: They want what baby boomers have, and will use their computer skills to get it.



Seeing no hope in the dead-end prospects provided by today's economy, cyberpunks want to take the future into their own hands.

everyone has the right to access information locked away in computer systems, as long as they don't harm it. They're content to roam the electronic pathways of cyberspace and break into systems for the hell of it.

Cyberpunks have no qualms about damaging, destroying, or capitalizing on the data they find. The scornful offspring of hackers, they regard their elders' look-but-don't-touch ethic as just plain stupid. "One of the things that differentiates us from hackers is that they say 'information is power.' We tend to say 'power is power,'" St. Vitus says. "I want information too, but I want it to lead to something. I want to get money from it, I want to get status, I want to get things. I want to move up, I want to tear you down, I want to break things—I want to build my things."

In their early 20s, Kid Thalidomide and St. Vitus are all too aware of their socioeconomic non-status. Born to lose in a service economy, they're also bound to pay for the debt and excesses of those who came before.

"If you think we feel a bitterness towards the baby-boom generation, you haven't even touched the surface," Kid says in disgust. They are deeply suspicious of me, too. Not only am I a media parasite, I'm a "have"—and at 27, I'm a little too close to the boomers for their comfort.

Kid and St. Vitus can be charming jesters; they can also come on like menacing technothugs. During one of our meetings, they casually rattle off my credit card number and hint at information they have on my

parents. They offer to give me a "test week," a firsthand experience of how they make someone's life hell. I say that I'll just believe them.

Cyberpunks use technology to get by in a world that doesn't offer them much else; they also abuse it to take out their anger at that world. It's a much more expressive, and potentially destructive, form of vandalism than graffiti or busting mailboxes. Their stunts include crashing voice-mail systems, sending nasty E-mail, and ordering absurd amounts of stuff in someone else's name.

They can wipe out data bases, shut off phone service, and reroute calls; they can alter arrest records or delete mortgage and car payments. They destroy information by setting off logic and data bombs and installing stuff that eats programs: Trojan horses, viruses, and worms. They perform all manner of scams with

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credit card numbers, phone passwords, and automatic teller machines. St. Vitus notes that computers ultimately control not just hospitals, banks, air traffic, and the 911 telephone emergency system, but also truck routing systems, traffic lights, and water and electrical

service—virtually every system that affects a large number of people or goods. Some cyberpunks dream—for now—of wreaking havoc in those systems.

Perhaps they're just experiencing an especially virulent strain of youthful disillusionment? "I've never had the illusion," counters St. Vitus. "I don't have that luxury. It just comes from growing up today—the time comes when you have to confront, What am I gonna do with my life? And when you start looking at your realities, you find yourself saying I guess I can't do that, I guess this isn't gonna work—nothing is gonna work!"

Nothing except computers and telephones, that is.

St. Vitus explains that his SX 64 portable computer is set up in Kid's studio apartment; a ten-dollar modem is his key to a global playground of databases, phone systems, and computer networks. He dials into a college's pool of modem lines, which students use for access to various libraries. But instead of calling a library, he hooks up to USAConnect, a cheap corporate long-distance service. "I make USAConnect dial from there. And if USAConnect traces it back to the school, there are four hundred lines or something going out, and they don't know which one it was. They'll just say, 'Sorry, we don't know who did this.' And USA-Connect can't make them pay."

Diverting, or covering your electronic tracks, is the first step to any PHAC activity. PHAC stands for phreaking (fun and games with the "fone" company), hacking, anarchy, cracking. If you're pulling something that could get you into trouble, you bounce back and forth off various long-distance telephone satellites, link together any number of corporate and university phone systems, and leave a long, indecipherable trail.

From there, say you want credit card numbers.



A lot of techno-mischief actually involves phone savvy rather than computer prowess.

There are lots of ways to get them, but one of the easiest is to mess around with the log-on procedures of certain computer networks. Once you have the number, you call up phone sex services and use "social engineering"—a good line of talk, an important cyberpunk skill—to make sure it's valid and to get the expiration

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date. St. Vitus gives an example: "You say, 'Baby I'm hot fer ya! Here's my number!' And she says, 'What's the expiration date?' and you say, 'Ooh, ah, ah can't really tell, it's fading out—1/95?' She'll say, 'That isn't it, right?' and you say, 'Really? Looks right. Uh, uh, 1/96? What is it then, I can't tell!' It might take you an hour to do it, calling different places. But it's pretty easy to get one. And then you log on to the CompuServe network and get an account there."

Personal credit card numbers may come easy, but it's a piece of cake to set up corporate accounts on CompuServe, an information service and cyberspace mall where you can get anything from stock quotes to tennis shoes. As Kid has found, "the more people you have involved with anything, the less security there is." St. Vitus enjoys taking on the biggest companies he can find. "I'd like to get a corporate account for Coca-Cola."

Courtesy of Coke, he boasts, he could get me a flight to France, along with a hotel room. "Maybe have them send over a case of champagne, why not? You could call France and get a limo service to pick you up. Just make sure that when you go to the airport you give a bum a letter with your name on it or a Social Security card for ID, and pay him five bucks to go get your tickets. 'Cause if he gets caught, the police know he doesn't have the know-how to do it."

Cyberpunks don't have much use for modesty; after all, if everything you take pride in is done electronically, you need to brag about it when you can. When I ask if they think they can get away with this stuff for long, St. Vitus doesn't hesitate to answer. "I know we can! I'm not

worried, because I trust my brain. That's the one thing that cyberpunks do above all, is trust your brain. I know mine won't let me down."

At least in the abstract, an employer would value the technological skills these two have gained. A college admissions officer would give them high marks for their determination and creativity. St. Vitus talks of the possibility of someday "exorcising all my demons," but it's hard to envision either of them as corporate nine-to-fivers. They sometimes sit in on college classes, or devour whatever's on the reading list for a particular course, but neither has the money for school full time, and they refuse to take out loans: "Debt just straps you into normalcy."

In a lot of ways, hacking and phreaking are a surrogate job. "It's not magical, you know," says St. Vitus. "All this stuff is work."

From St. Vitus' home and the University of Minnesota computer labs that serve as Kid's office, the pair often digs up corporate dirt—unauthorized credit purchases, contract bids, and such—and uses it to blackmail or sell to the right person. "I have enough going on that I can do basically everything I want," says St. Vitus. "I can get credit card numbers, I can get a flight somewhere, I can get what I really need."

Industriously undermining the system digitally, these two even take business trips. Last winter, they scammed a couple of Northwest Airlines tickets from CompuServe and went to New York, where they hung out for several weeks and met with other cyberpunks.

St. Vitus is helping to organize what he predicts will be the first "electronic riot": a possibly nationwide (he's not sure) scheme involving various banking systems. "This is the most delicious event ever to be perpetrated on corporate America. It is so glorious..." He's itching to tell more, but can't. Kid breaks in: "In England they have bank holidays often, and in America, we're going to have an *involuntary* one!" At any rate, "it will be really beautiful, and at the same time, destructive," St. Vitus assures me. "Like an atom bomb."

Back in junior high school, St. Vitus was taken with Kid's jokes in home ec class, like putting sewing pins into muffins. They're the perfect merger of punk and cyber: Kid was listening to the Clash and making pipe bombs; St. Vitus, who grew up in a strict religious household, was into computers and



Kid demonstrates how simple it is to "phreak" an apartment building's phone system.

comic books. St. Vitus says, "I could see that Kid was access to what I needed, but he needed more info. He had the open lake and the boat, but no paddles—he didn't really have anywhere to go."

St. Vitus provided the technological know-how, and Kid thought up ways for them to use it. As an antidote to life in a small Minnesota town that Kid describes as "so mind-numbingly boring, the boredom hurt," the two soon set their sights on talking to President Reagan. After several weeks of investigating both the White House phone system and former Minnesota

"We've been treated as machines, so that's why machines have become our friends."

Representative Bill Frenzel, they say, they finally got through to Reagan from their high school pay phone, posing as the congressman. After several requests to speak to the president himself (it's doubtful his aides believed they were talking to Frenzel), an aide finally replied, "The president is listening on the line, and this call is being traced." Kid screamed, "Trace this—you STINK!" as St. Vitus chimed in, "Fuck YOU!" It was their first big rush.

They were misfits among the well-scrubbed, well-off honor students at their high school; during his senior year St. Vitus was living illegally in an aban-

doned building with his father. (His family lost several houses to debt, he says, which is why he refuses to take on any himself.) After graduating—Kid never actually received his diploma—both did time on the street, dumpster diving, squatting, shoplifting; they would get food and spare change by stealing from delivery trucks and taking returnable milk cartons from the back of grocery stores up front to resell them.

The bespectacled computer nerd and the stylish street thug would make perfect material for a Hollywood “buddy” movie. But even as they play their assigned roles, they’re wary of coming off too cartoonish. As a pair, they embody cyberpunk’s combination of a gritty, street-level do-it-yourself spirit and high-tech ingenuity.

“People don’t really know what cyberpunk is,” Kid grumbles. “There’s this big group of aging hippies who’ve glommed onto it.”

“Rich old farts with saggy butts,” adds St. Vitus, “trying to act like they’re something they’re not.”

Now that the media are beginning to process cyberpunk as the next big countercultural fashion happening—culminating in *Time*’s oh-so-au courant cover—Kid and St. Vitus have to scoff at the buzz around raves, smart drinks and drugs, and techno/industrial music. Cyberpunk is their life, not a life-style.

One of their favorite targets is *Mondo 2000*, a flashy West Coast magazine that disseminates a slick, rather affluent view of cyberpunk. “They have this big spread in every issue called Street Tech. The systems in there have no application on the street at all,” smirks

“I want to move up, I want to tear you down. I want to break things—I want to build my things.”

Kid. “If those *Mondo* hippies were attacked by a gang, they would fuckin’ wave a floppy disk at ‘em!” One method of self-defense he’s experimented with is running an electrical current through the spikes on his leather jacket to shock attackers. “That’s technology for the street.”

“Technology is perfect in that it gets old and crappy and nobody wants it,” continues Kid. “For us, street tech means—I hate to say—self-empowerment. But that’s what it is, for people like us who don’t have shit. With a five-dollar, thrift-store dumb terminal [a computer with no memory] hooked up to a pay phone you can go and fuck off a system that someone spent tons of money on!” St. Vitus adds, “Your five dollars could turn into maybe a million times more damage—if you know what you’re doing. That’s eloquent violence.”

At the dawn of hacker culture in the ’70s, hackers began connecting with each other through a nationwide

network of electronic bulletin board systems, or BBSs. Today, thousands of boards serve as a cyberspace forum for the latest technochat.

St. Vitus logs onto one called the All Postal Worker Army and calls up a menu of how-to text files on credit card scams, getting dial-ups (access codes to long-distance services and computer networks), and social engineering techniques. BBSs are the major form of socializing for

Cyberpast

A short history of the future

THE TERM CYBERPUNK WAS BRAINSTORMED BACK IN 1980 BY BRUCE

Bethke as the title for a short story he’d written about a computer-hacker gang—bored suburban kids out to raise hell. The story, which was published in the magazine *Amazing* in 1983, remained obscure, but the title took root, first in the science-fiction community and then in the media at large.

The success of William Gibson’s first novel, *Neuromancer*, published in 1984, actually put the word *cyberpunk* on the map of the public consciousness. Set in a future urban dystopia, the novel centers on Case, a software cowboy for hire. Burned by Japanese microbionics experts who bonded tiny sacs of a wartime Russian mycotoxin to his artery walls, Case is suffering a slow death. He finds a man who can cure him, provided, of course, that he is able to penetrate a highly secured computer system and acquire the key information.

While the word *cyberpunk* never appears in *Neuromancer*, it was the term that reviewers used to define Gibson’s book and the new genre that suddenly seemed to be everywhere. Other cyberpunk-oriented works by such writers as Bruce Sterling (*Schismatrix, Islands in the Net*), Pat Cadigan (*Mindplayers, Pretty Boy Crossover*), and John Shirley (*Eclipse Corona*) captured sci-fi fans.

What happened when cyberpunk science fiction hit was a case of life imitating art. “Suddenly, the concept of cyberspace took hold and inspired the real hackers, and they began to redirect their efforts in the technical arena. It gave us a vision of the technology’s potential,” says Michael Synergy, a legendary figure in the cyber underground. “Most computer enthusiasts and a lot of the hackers are very technical, but not in touch with the world at large. The difference is that cyberpunks are very technologically capable but at the same time very worldly, connected to reality and what’s going on in the culture.”

cyberpunks, who seldom meet face to face.

As proof of their cunning, cyberpunks also use BBSs to post documents purloined from various institutions. Strategic info—stuff about air traffic control systems, for instance—does circulate on the boards, but the FBI and Secret Service are catching on: Several boards have been shut down. "Shut-

In essence, the cyberpunks are to the hackers as yippies were to hippies—political, savvy, worldly versions of the alternative culture. They don't hang out in coffeehouses, but in cyberspaces, communing, often anonymously, on computer bulletin board systems.

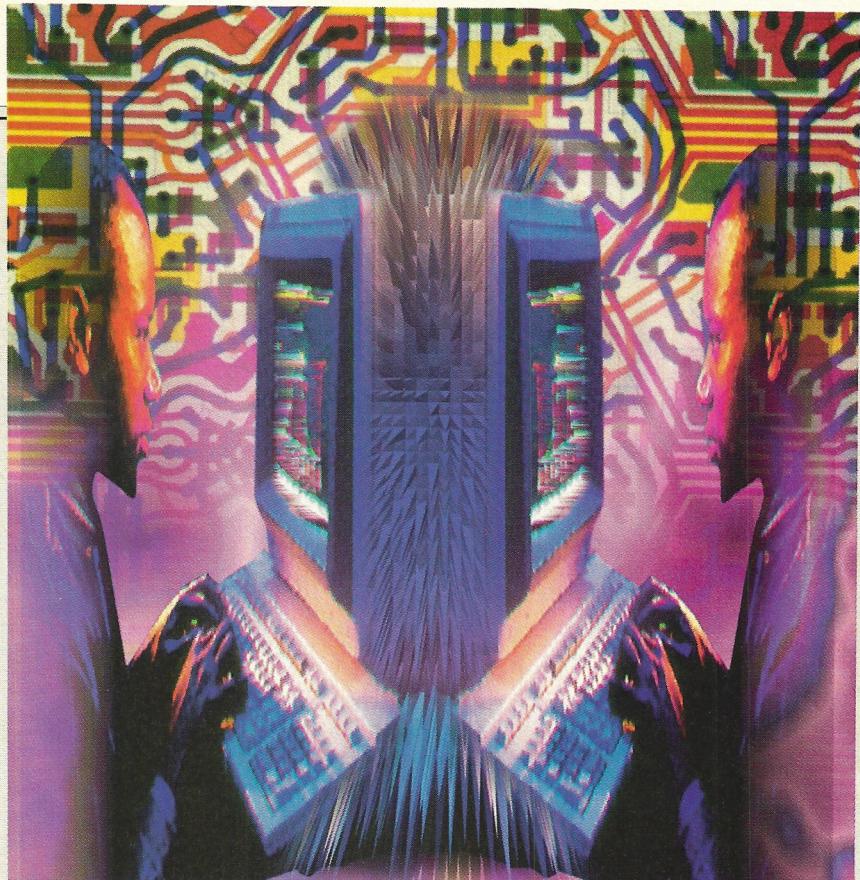
Central to the cyberpunk viewpoint is the belief that governments—nation-states—are giving way to multinational corporations—global states. These entities are located not in one geographical location but throughout the world via global networks on the electronic frontier.

In this electronic landscape, cyberpunks see a future where those who have information will be separated from those who don't. By disseminating information—be it corporate plans or top-secret government operations—they believe they can take on this new technostablishment in roles that range from benign sociopolitical watchdogs capable of averting global oppression to anarchists retaliating against corporate greed by wreaking havoc on computer systems—or as electronic terrorists ready, willing, and able to take out an enemy simply by shutting down the systems.

It comes as no surprise then that the government is up in arms. To the Secret Service and the FBI—the government agencies charged with computer law enforcement—the term *cyberpunk* has almost come to mean computer criminal.

With the recent arrests of numerous hackers for illegal entry and possession of data, the battles over hackers' rights and control of the electronic frontier are now being waged in court. Spurred by such incidents, the computer community rallied, forming the Electronic Frontier Foundation to protect freedom of speech

ting down" involves raiding the operator's home and confiscating all computer equipment, often along with anything else that plugs into an outlet, right down to the clock radio. Even though it's difficult to make criminal charges stick, since little to nothing can be traced, few



and expression in cyberspace. One critical issue is whether information belongs to a given corporation or government or whether it belongs to the world.

The cyberpunk future is still up for grabs. But indications are that the world is moving toward dominance by multinational corporations, whose increasing monopolization of information yields more and more power over individuals as well as nation-states. The new tools for diplomacy, politics, espionage, and terrorism will be electronic ones.

While cyberpunk seems to have the potential for being the most potent, effective force ever to challenge existing authority, its impact remains to be seen. One thing, however, is certain: Cyberpunk isn't just science fiction anymore.

—A.J.S. Rayl
Omni

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operators have the means to take the feds to court and get their equipment back.

PHAC boards also act as distribution centers for illegal software and computer viruses. "I wish I could impress on ordinary people how serious viruses really are," St. Vitus says, "because they're so simple to do!"

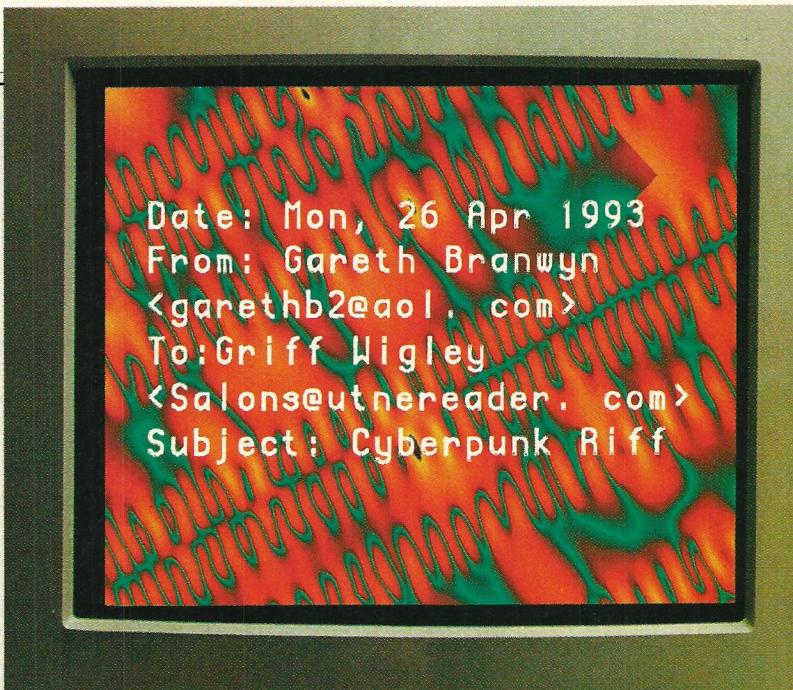
BBSs are a meeting ground for all manner of cyberpunks, technohippies, and "lurkers" (often computer security people who log on just to find out what's going on), but St. Vitus finds that "you're preaching to the choir when you're on a BBS a lot of the time. You say, 'I think phreaking is good!' Well, so does everybody on your board." That's why he and Kid began producing *Cybervision*—a low-tech 'zine that's their answer to *Mondo* and, they hope, a recruiting tool for

proto-cyberpunks. It's their investment in the future: Despite their disillusionment in other arenas, these two still harbor that undying American dream of success. "I don't doubt that we are going to become huge, because I think there are too many people out there who feel the same way we do," says St. Vitus matter-of-factly.

St. Vitus writes many of *Cybervision*'s essays and masterminds their larger hacking projects, while Kid supplies the fashion and attitude, as well as how-to features: home-made guns and gunpowder, grain alcohol, punk fashions.

Right now, Kid scrapes by with part-time office-cleaning jobs; St. Vitus does market research and telemarketing. Their combined work histories run the gamut of menial labor, from UPS to McDonald's.

"People talk about wage slaves, but the term doesn't even begin to de-



A hippie hacker responds

Editors' note: Griff Wigley, Utne Reader's electronic salonkeeper, solicited this E-mail response to the "Cyberpunks hate you" article from cyberspace observer Gareth Branwyn. Branwyn wrote *Mondo 2000*'s now defunct Street Tech section.

Dear Utne Reader,

I think the "Cyberpunks hate you" article is excellent—an accurate portrayal of two high-tech ne'er-do-wells. All the claims made by "Kid" and "St. Vitus" are at least theoretically possible. Hackers, crackers, and phone phreaks are famous for their self-promo-

tion. Stripping away the bravado and the high-tech sleight of hand from real technical expertise is difficult for people who are not hackers themselves. A huge percentage of what phreakers and crackers do comes under the heading of "social engineering" (getting information over the phone or through other low-tech means, usually via posing as someone else). There are not nearly as many code-breaking wizards in this subculture as the wizards would like you to believe. Mostly they work their grafts by making phone calls, going through people's trash, and other tried-and-true forms of the scammer's art. Hacker underground BBSs are jam-packed with files revealing all these, often low-tech, "secrets." Getting someone's credit information, especially the popular "I hacked your TRW file" (used to intimidate journalists), is frequently done by finagling the info directly from TRW (the major credit rating bureau). No flashy "hacker runs" are required; one simply poses as someone running a credit check. Getting info about a person's background and family history is also more easily done over the phone than via complex computer trickery. The nationwide trafficking of phone call-

NICK PHILIP

scribe what it's like to be young and living today," says St. Vitus. "I can't even see ten years into the future, because I don't hardly know how I'm going to survive, and I can't imagine what's going to happen to me once I actually have a normal life. I can't even picture it."

Some people have no faith in the future and choose to live it up in the here and now; for these two, even the present sucks. "Nihilism doesn't go far enough for me; it's saying I want to wreck everything so something better can come up. But I don't even expect anything better to come up! I think it's an abomination that I even exist—the lives of Kid and I and some other people we know are some of the most tragic stories I can think of."

Tragic is a word too easily glossed over, but hang with these guys for a while and you start to understand. The applications for educational grants that yield \$61.39

for a semester. Spending a fair chunk of your three-thousand-dollar annual income on cat food and litter so you can feel like you're caring for some kind of living being. Slinging blood-soaked sheets in a hospital laundry. At your janitorial job, you may get to crack the office computer system while the supervisor's not around, but more often you're cleaning toilets and picking up the occasional used condom someone's left in the stall. "How can you value yourself when you have to do things like that?" asks Kid. "When you don't value yourself, how can you value any property or information?" The fact is, they don't. They do, however, value the glory of electronically fucking it up.

There's no denying that lots of other people lead crummy lives—Kid and St. Vitus just can't comprehend how they accept them. "I am who I am 24 hours a day, and I can't change my personality just so I can

ing card numbers by those on the lowest rung of the phreaker/cracker ladder, the "Kode Kidz," is largely made possible by the Kidz standing behind people at pay phones and watching them enter their access numbers.

Which is not to say that people like Kid and Vitus shouldn't be taken seriously, or that they're not capable of making a mess of things. The point is that people, especially those who are non-technical and fearful of technology, can get carried away with visions of rampant computer terror perpetrated by young digital tyrants. Ultimately, this fear doesn't do anybody any good, except the high-tech pranksters themselves (and of course the computer security industry). The best defense is a level head, a little knowledge of huckster skills, and a better understanding of who these people are and what makes them tick. Caniglia's article is a contribution to the latter.

My concern with increasing media coverage of the "cyberculture" is that, ultimately, the point of it all will be lost. This high-tech subculture still seems to be the most interesting nexus of conversations about technology and power, the evolution of human-machine rela-

tionships, the changing nature of the human body in an increasingly "virtual" world, and the advent of truly decentralized media technologies. I continue to think that the issues, arguments, and strategies for change bandied about within the cyberculture are of prime importance to our individual and collective survival.

The media are only now beginning to catch on to all this, with recent articles in *Omni*, *Time*, *Rolling Stone*, *Details*, and several major dailies. Although most of these articles focus on the sci-fi "glam" aspects of cyberculture (virtual reality, brain toys, smart drugs, computer break-ins), all of them at least touch on the deeper currents that move under the marketable surface image. Philip Elmer-Dewitt ends his piece in *Time* magazine (Feb. 8, 1993) with: "Most of all, they [cyberpunks] realize that if you don't control technology, it will control you. It's a lesson that will serve them—and all of us—well in the next century." The *Rolling Stone* article (April 15, 1993) is downright giddy over the possibilities for computer networks functioning as an entirely new interactive news medium, recently dubbed "sociomedia" by one academic. Au-

thor Jon Katz calls cyberspace and the grass-roots news that passes through it "the purest journalistic medium since smoke signals."

But hold on to your wallets, folks, 'cause Hollywood is about to swallow all of this whole. There are lots of TV shows, films, books, and rock albums now appearing, and undoubtedly oodles of other hastily produced cyber "goodies" are in the works. Amazing stories about high-tech street punks like Kid and Vitus will be optioned over breakfast by movie moguls. Crafty cybershowmen like them will become instant stars who will move into Vanilla Ice's house, eat and drink too much at Hollywood galas, and grow sagging butts of their own. A friend recently told me that he saw a "grunge" clothing section in a local department store. Can mass-marketed "cyberwear" and hacker superheroes (and villains) be far behind? I can assure you they aren't. While this is the inevitable progression of pop culture, and not something that can really be stopped, it shouldn't spell an end to the deeper thinking that is going on now and that I hope will re-emerge, without too many scars, on the other side of cyberculture's 15 seconds of fame.

—Gareth Branwyn

be helpful to you at McDonald's," St. Vitus insists. With cyberpunk, they've found a way of anonymously lashing back at the people who see them as no more than subservient service-industry drones. "We've been treated like machines, so that's why machines have become our friends," Kid rationalizes, with no small amount of hostility.

Their outlook makes for a life of extremes and contradictions, a tendency toward self-hatred and self-glorification, and a manic energy and determination to "wreck stuff" that only drop-dead boredom can spawn. For instance, the almost-vegan (Kid) and junk food aficionado (St. Vitus) talk about a cyberpunk survivalist ideal: learning eventually to live on vitamins alone, eating newspapers as roughage. That's more realistic to them than the ideal of growing one's own food, which they nevertheless dream about.

And while they may be at the cutting edge of technology—or, rather, clinging to its underbelly like poison barnacles—the pioneer spirit carries over into other areas of their lives. They romanticize the privilege 19th-century homesteaders had in staking their claim to land and the challenges they faced in transforming it into a fruitful home that would allow them to survive and prosper.

Cyberspace is the frontier that keeps on unfolding. Unlike the Old West to which it's sometimes compared, it doesn't get tamer and smaller with the passage of time—it gets wilder and more expansive. "As long as there's technology, there'll be outlaws who exploit it. People don't seem to realize that 14-year-old kids out there know more about the phone system than technicians at the phone company," says Kid. "That's a major glimmer of hope for me."

When 1999 closes out, these young savages steeped in Sega, Nintendo, and Bart Simpson will be fully formed—and, Kid hopes, dysfunctional—adults. The third millennium presents the perfect occasion to cook up schemes to perpetrate on us technological illiterates.

Sure, computer security will become more sophisticated. In fact, a few corporations and government agencies have gotten to know the enemy, hiring cyberpunks to crack their systems so they can further fortify them. "We're the ones who create the problems, and it's always harder to solve a problem than it is to create one," explains St. Vitus simply. "We have a whole network of people who are dedicated to doing whatever it is we want to do. They [computer security] have the people they work with and maybe a couple of people they can call. And when my brain is working 24 hours a day on something and yours is working six and a half not counting lunch, then we're obviously gonna kick your ass."

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—Compiled by Griff Wigley
with Andrea Honebrink

The future of reading

We scan, sort, fax, and listen—and the written word remains

For a long time now, people have been predicting the death of the written word. The inventions of the telephone, the radio, the television, and the computer were all closely followed by doomsayers sounding the death knell for reading. Some of the writers represented here, such as Sven Birkerts, feel that our entrance into the electronic millennium is near. In just a few years, they say, we'll look back at curling up with a good book as nostalgically as we now view the sleeping porch and the sleigh. Other writers, Pat Aufderheide and Veronique Vienne among them, say we're reading just as much as ever, but in different forms—from screens and faxes instead of bound paper—and in different styles—scanning and juggling our reading material rather than progressing through it systematically and steadily. But littera scripta manet, as other futurists remind us: The written word remains. With the increasingly easy manipulation of images, some predict that text could soon be the most trustworthy medium left.

Even if we do take to listening to audio books and CD-ROMs rather than reading glowing screens or weighty tomes, it's all communication, all language. And as long as we're human, language will prevail.

Into the electronic millennium

What will it mean for language?

THE PRINTED WORD IS PART OF AN OLD ORDER THAT WE ARE MOVING AWAY from. This is a shift happening throughout our culture, away from the patterns and habits of the printed page, and toward a *terra nova* governed almost entirely by electronic communications.

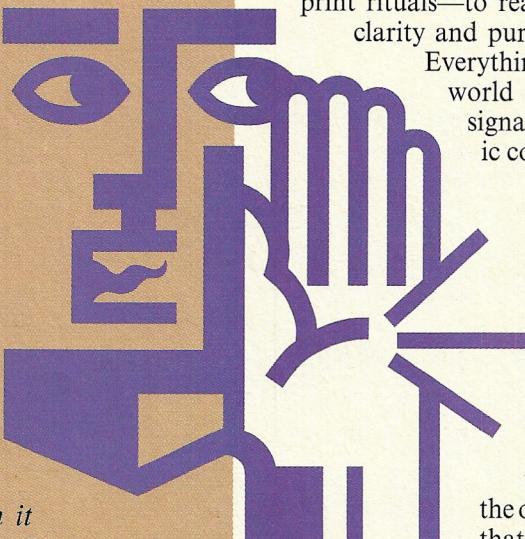
I don't need to argue the fact of this change too strenuously. The evidence is all around us, though possibly in the manner of the forest that we cannot see for the trees. The electronic media have slipped deeply and irrevocably into our midst, creating sluices and circulating through them. I'm not referring in isolation to television, or fax, or to computer networks. I mean the interdependent totality that has arisen from the conjoining of parts—the disks hooked to modems, transmissions linked to technologies of reception, recording, duplication, and storage. Numbers and codes. Buttons and signals. Except for the poor or the self-consciously atavistic, this is no longer the future—it is now. In the presence of this *now*, the scheme of things represented by print and the snail-paced linearity of the reading act looks stodgy and dull. They say that

our students are less and less able to perform the old print rituals—to read, or analyze, or write with clarity and purpose. Who can blame them?

Everything that they encounter in the world around them gives the same signal: That was then, and electronic communications are now.

Transitions such as the one from print to electronic media do not take place without rippling—more likely, *re-weaving*—the whole of the social and cultural web. And we don't need to look far for evidence that this is what is happening. We can begin with the headlines, and the lamentations sounded in the op-ed pages and on talk shows:

that our educational systems are in decline; that our students are less and less able to read and comprehend their required texts; that tag-line communication, called “bite-speak” by some, has destroyed the last remnants of discourse in our public political life and made spin doctors and media consultants our new shamans; that as communications empires fight for global hegemony, publishing itself has fallen to the tyranny of the bottom line, and that the era of the “blockbuster” is upon us; that funding for the arts is being cut on every



front, while the arts themselves appear to be suffering a deep crisis of irrelevance. And so on.

Every one of these developments is, of course, complex in its own right, but there can be no doubt that they are all profoundly connected to the transition that is under way.

Certain developments illustrate the shift into the electronic millennium. Think of Whittle Communications' commercially sponsored TV programming for schools, the Library of Congress staff member who was quoted in the *Washington Post* as saying his institution may go the way of the old railroad stations, and the new fiction loved by college students because it reads like a barrage of images rather than a flow of prose.

Whether all of this sounds dire or merely different will depend upon the reader's own sense of values and priorities. I find these portents of change depressing, but also exhilarating—at least to speculate about. On the one hand, I have a great feeling of loss and a fear about what habitations will exist for self and soul in the future. But there is also a quickening, a sense that important things are on the line. Following are some of the kinds of developments we might watch for as our era yields to an all-electronic future.

1. Language erosion. The change from the culture of the book to the culture of electronic communication will radically alter the ways in which we use language, on every societal level. The complexity and distinctiveness of verbal and written communication will gradually be replaced by a more telegraphic sort of "plain-speak." Syntactical masonry is already a dying art; simple linguistic pre-fab is the norm. Ambiguity, paradox, irony, subtlety, and wit—fast disappearing.

The growing impoverishment of language will escalate through a series of vicious cycles. Curricula will be streamlined and simplified, and difficult texts will be pruned and glossed. Fewer and fewer people will be able to contend with the masterworks of literature and ideas. Joyce, Woolf, James, and the rest will go unread. Whatever exchange of ideas there may have been in our society will wither away, except, of course, among the echelons of the professional academic. The gulf between the academic and the man in the street, already wide, will become unbridgeable.

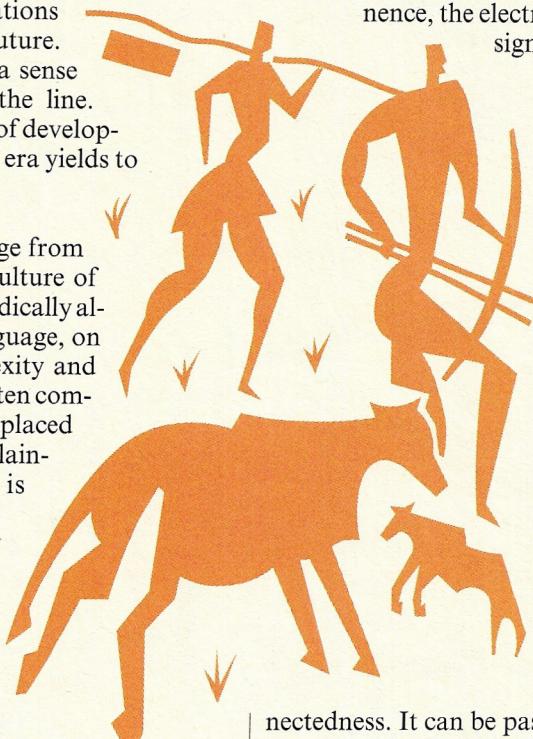
2. Flattening of historical perspectives. As the circuit supplants the printed page, and as more and more of our communications involve us in network processes—

which go forward in the immediate present, the *now*—our perception of history will inevitably alter. Changes in information storage and access are bound to impinge upon our historical memory. The depth of field that is our sense of the past is not only a linguistic function, it is in some essential way represented by the book and the physical accumulation of books in library spaces. In the contemplation of the single volume, or mass of volumes, we form a picture of time past as an accumulation of sediment; we capture a sense of its depth and dimensionality. Moreover, we meet the past as much in the presentation of words on pages in books of specific vintage as we do in any isolated fact or statistic.

The technology—visual and non-visual—in every way encourages in the user a heightened and ever-changing awareness of the present. The *now*. It works against historical perception, which must depend upon the notions of logic and sequential succession. If the print medium exalts the word, fixing it into permanence, the electronic counterpart reduces it to a signal, a means to an end.

The more we grow rooted in the consciousness of the *now*, the more it will seem utterly extraordinary that things were ever any different. And here, naturally, the entertainment industry will seize the advantage: The past will be rendered ever more glorious, ever more a fantasy play with heroes, villains, and quaint settings and props.

3. The waning of the private self. In the electronic order, information and contents do not simply move from one private space to another, but travel along a network. Engagement with them is intrinsically public, taking place within a larger circuit of con-



nectedness. It can be passive, as with television watching, or interactive, as with computers. This connectedness is so profound that we may even now be in the first stages of a process of social collectivization that will over time all but vanquish the idea of isolated individuality. For some decades now we have been edging away from the opaqueness of private life and toward the transparency of a life lived within a set of systems, electronic and other. I am not suggesting that we are all about to become mindless, soulless robots, or that personality will disappear into an oceanic homogeneity. But certainly the idea of what it means to be a person living a life will be much changed. One day soon we will conduct our public and private lives within networks so dense, among so many channels of instantaneous infor-

mation, that it will make almost no sense to speak of the differentiated self.

The expansion of electronic options is always at the cost of contractions in the private sphere. It's axiomatic. We will soon be navigating with ease among cataracts of organized pulsations, putting out and taking in signals. We will bring our terminals, modems, and menus further and further into our former private sphere; we will implicate ourselves effortlessly into the unitary life of the network, and we will no longer remember that there was ever any other.

No one can really predict how we will adapt to the transformations that are already under way. It may turn out that language is a harder thing than I have allowed, that it will flourish among the bleep and the click and the monitor as readily as it ever did on the printed page. I hope so, for language is the soul's ozone layer, and we thin it at our peril.

—Sven Birkerts
Boston Review

Excerpted with permission from *Boston Review* (Oct. 1991). Subscriptions: \$15/yr. (6 issues) from 33 Harrison Av., Boston, MA 02111. Back issues: \$4 from same address.



printed page—but they were not “reading.”

Unlike reading, which requires you to sit down, scanning can be done while you’re standing. And you don’t have to be an executive or a professional to be able to size up printed matter sight unseen. We all routinely scrutinize our junk mail and can pretty much figure out what’s inside without tearing open the envelope. We can evaluate a magazine sold at the checkout counter as accurately as the electronic eye of the scanner. And, of course, we can browse through a bookstore and judge the books by their covers. At a time when there’s so much to read, we are losing our normal sight and developing a new skill—we can gauge the content of a written text by the way it feels to the touch, by its heft, and by its look.

The recent redesign of *The New Yorker* came as a result of our changing reading habits. Originally written, edited, and designed for a generation that took the time to read, the magazine was becoming obsolete; changing it made sense. But readers and non-readers alike saw it as a timeless institution, a symbol of everything reading stands for—privacy, discovery, and culture. So, naturally, changing *The New Yorker* was interpreted as a sign, as the end of a golden age.

A careful review of this redesign shows what a significant difference the smallest adjustment can make in the mind of a sensitive reader. For starters, critics say that the magazine’s new contents page looks as if it were on steroids. They are right. The clarity the old table of contents used to achieve—with only two typefaces and a minimalist use of punctuation—is destroyed by six type changes, bigger and bolder typefaces, a complex system of indentations, and a tight progression of department heads, title heads, and subheads. At a glance, and even before you have a chance to read anything, the table of contents is letting you know that you are getting a lot for your money, suggesting with graphic eloquence that the magazine is now concerned with quantity. But is the experience of reading a quantitative one?

The inside pages “look” more substantial too—at least by today’s standards. To increase the subliminal

Scanning versus reading

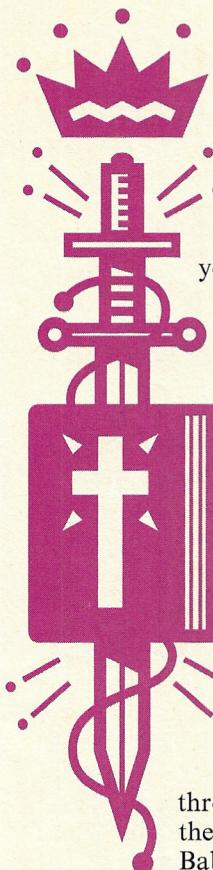
Does The New Yorker’s redesign symbolize the end of reading’s golden age?

OPEN A BOOK OR A MAGAZINE AND YOU’VE CREATED A SCREEN BEHIND which to hide. In this comfortable position you can think about what you want, or go to sleep. Or you can read for a while and then look up from the page and stare into the distance. That must be why readers like to sit by the window—because reading is a pretext to glance at the rooftops, watch the rain, and observe the lengthening shadows.

In this introspective state, thoughts and emotions often collide; reading can annoy or inspire you—and sometimes you have to tear your eyes from the page to sort out what you feel. That’s when reading is at its best, when you stop in your tracks and, for a brief moment, look deep inside yourself.

Today a lot of people think they’re too busy to read. They scan. They feed the printed page (also called *food for thought*) directly into a sophisticated mental

decoding machine that evaluates its relevance, convenience, and profitability. Good decoders are easy to spot: They almost hum when they process information. I have met editors who could appraise a manuscript simply by looking at the first sentence. I have worked with people who don’t read but inhale memos. I have seen businessmen and women make or break a deal just by glancing at the cover letter of a 12-page proposal. All these people were in a state of high awareness when they looked at the print-



density of the printed page and to give the articles a sense of importance, the magazine's designers have incorporated into the texture of the text such graphic elements as typographical rules and descriptive running heads with matching folios—small details that say *they care*. Details that you usually take in but don't *read*.

But perhaps we are going back to an earlier system of communication.

In high antiquity, the only people who could read (and write) were that handful of writers, scribes, calligraphers, and copyists able to memorize the six thousand pictograms or hieroglyphs necessary to write the old languages. Loaded with meaning and emotional connotations, these picturelike signs were, in a way, similar to our computer icons.

Pictograms cannot be read; they can only be scanned. The Egyptian, Sumerian, and Chinese scholars were literate, but they could not read. Like a modern "reader" who flips through a magazine to find out what's there but hardly stops to read, an educated Babylonian priest would scrutinize a series of pictograms and decipher their subliminal, contextual, and cultural implications. Ancient texts, carved on statues or painted on silk or papyrus, were just as clever and creative as today's most daring graphic designs. They combined inscriptions with realistic images the way we combine photographs with captions, stories with sidebars, headlines with editorial comments. When you don't read but just look, the visual cues and the artistic appeal of a document are of critical importance. Ancient texts and contemporary magazines have one thing in common—to engage readers, they first elicit emotional reaction. The purpose of illustrative or expressive layouts is to integrate the author's and the magazine's point of view into a coherent, non-cognitive whole. Pictures—and pictographs—can mean different things in different contexts, and the role of design is to provide the proper perspective.

The future is pointing in the direction of information, in the direction of scanning, not poetry and opinion. In the electronic age, with its information anxiety, editing—selecting what to pay attention to—is the real challenge. I read newspapers with a pair of scissors in hand, clipping my way through a high-tech world with this primitive interactive tool. Without knowing it, I deal with information in the same way as the new electronic "books" deal with content; I chisel my way into the heart of the matter by a process of elimination.

Compact-disk technology such as CD-ROM supposedly allows users to interact with text by giving them

options and letting them decide what's important. But the word "interactive" is misleading, because computer programs promote a passive relationship with language. Video screens, divided into sections, with rows of icons reminiscent of Egyptian hieroglyphs, answer the user's questions.

Reading, on the other hand, is difficult, demanding, and stressful. To decipher the abstract written text, you must mobilize your highest mental faculties. The exertion is so intense that it leaves an unforgettable impression on the mind. Like smells, written words can capture whole sections of time, and hold, between the letters, the remembrance of things past.

—Veronique Vienne
Metropolis

Adapted from Metropolis (March 1993), the urban magazine of architecture and design. Copyright © 1993 Bellerophon Publications, Inc. Subscriptions: \$28/yr. (10 issues) from Box 14012, Dayton, OH 45414.

It's not the medium, it's the message

Should we resist the electronic media—or the commercialism that drives them?

WE MIGHT OR MIGHT NOT BE IN THE MIDDLE OF A SHIFT IN POPULAR CONSCIOUSNESS as a result of the invasion of electronic media. It is certainly true that my students today behave differently from those of a mere 15 years ago. They are, for instance, much better at judging the "performance" side of my teaching than their predecessors. And they are, if not worse at reading, much less apologetic for any weaknesses they might have.

Among the things we don't need to worry about, I think, is the future of reading. If we do, then I need the people who mourn the passing of print to give me better answers than I can find for these questions:

- How much were the working poor reading in the days before mass circulation newspapers and magazines? And what most effectively boosted that circulation? Does buying a newspaper to get "The Yellow Kid" comics count as involvement in a linear, somehow better culture?

- Has the reading capacity of the professional elite in this country, and its technical support class, really declined?

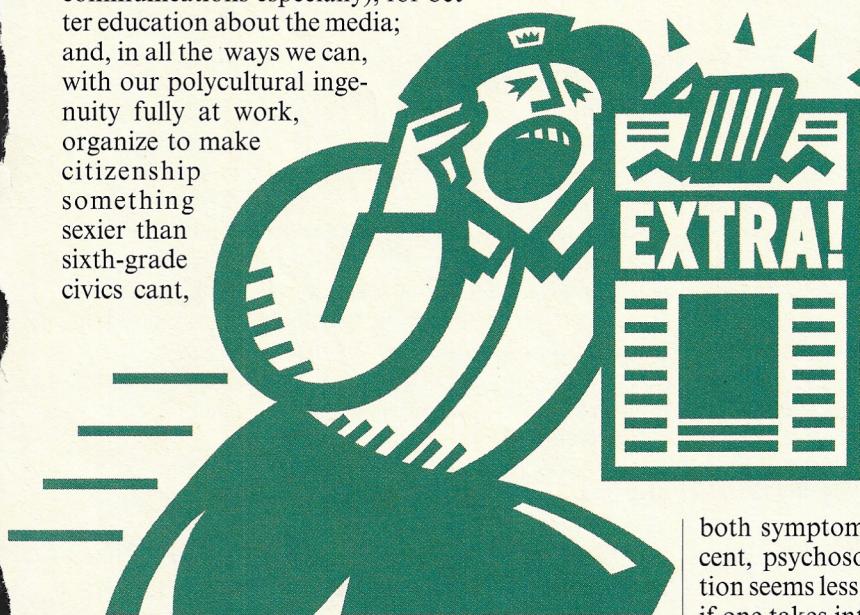
- Have digital computer innovations reduced the domain of print? If so, please explain to me the multiplication of faxes around the world.

- Have computers reduced the amount of writing and reading? Not if we judge by the amount of paper generated in the computerized workplace. The "paperless office" is the hula hoop of modern concepts.

We are all uneasy about something real, but it's not the triumph of the electronic media over reading. It's the ingenuity of marketers at using the electronic media to sell not just their products but also a way of life defined by endless choice among few, and very limiting, options.

And we're uneasy about something that the seamlessly commercial mass media have accomplished, which is a shallow but superficially convincing national consensus. "We" like strawberry ice cream (something the newspaper *USA Today*, not a radio or television program, tells us, please note), and "we" "support the troops." But "we"—or rather the programmers of our mass media, who intensely dislike distracting us from the business of consumption—find analysis of stinky, ugly issues like the militarization of the economy, the corruption of social welfare programs, and the disposal of toxic wastes either tedious or uncomfortable. The creation of a pseudo-public, a cheaply unified national culture stuck together with Teenage Mutant Ninja Turtles chewing gum, has a terrific cost.

If we focus on the medium and individual reception of information, jumping directly from the technological to the psychological, we won't come up with any interesting alternatives to being curmudgeons about electronic media. Instead, let's ask ourselves how we can organize for more public space in our local and virtual communities, for better public policy (in telecommunications especially), for better education about the media; and, in all the ways we can, with our polycultural ingenuity fully at work, organize to make citizenship something sexier than sixth-grade civics cant,



to make it something we want as much as we want our MTV.

—Pat Aufderheide
Boston Review

Excerpted with permission from Boston Review (Feb. 1992). Subscriptions: \$15/yr. (6 issues) from 33 Harrison Av., Boston, MA 02111. Back issues: \$4 from same address.

Channel surfing hits print

Does anyone read one book at a time anymore?

Recently, upon dragging myself out of bed, I tripped over a heap of books that had apparently fallen from my bedside table. Since this was the second time in a week that my morning motor faculties had been tested in this manner, I was driven to engage in a bit of self-analysis. Why, I asked myself, do I have so many books on the go? Whatever happened to the days when one Nancy Drew mystery sufficed as bedtime reading? Whatever happened, in other words, to the concept of *one book at a time*?

Glancing down at the heterogeneous mass of printed material lying around my bed—with titles ranging from *Feminism and Foucault* to *The Making of the Atomic Bomb*—I was forced to recognize that even the notion of one *interest* at a time was no longer operative in my obviously twisted, postmodern psyche. And with that thought it came to me: Perhaps there was a sociological explanation for my private dementia.

At first glance the culprit appears to be television. Reading today is informed by TV watching and, in particular, by that habit that so infuriates our elders: switching channels. Similarly, reading has become a disjunctive experience in which the reader "flips" from book to book and from genre to genre. And so, no sooner do I pick up *The Nation* than I find my interest flipping to Kazuo Ishiguro's *The Remains of the Day* and, minutes later, to a borrowed copy of *The Landlord and Tenant's Act*.

But fun as blaming everything on television may be, is it really as simple as this? Or are switching channels and flipping from book to book

both symptoms of some larger, presumably quite recent, psychosocial phenomenon? The latter explanation seems less simplistic and more plausible, especially if one takes into consideration the monumental socio-economic and technological changes that have occurred in the past two hundred years.

Not the least of these changes has to do with styles and paces of living. For instance, unlike the mostly middle-class and female readers of the early novel, we lack the time to read for extended periods. If we read at all it's probably on the bus or subway to and from work; when we arrive home at night, exhausted by our drone-like nine-to-five existence, we are much more likely to

is it a simplification, yet another ingenious way of turning everything into entertainment?

I have come to listening late, and I have come tentatively; my biases are those of a reader. I have more than a few times grumpily written that our growing immersion in our various circuitries is cutting us off from the civilizing powers of the written word, that electronic books and interactive videos will leach away our capacities for reflection, and so on.

But those are all scenarios for the future. The audio book is now. And even given my Luddite disposition, I find that the medium has a number of attractions. Listening is, no matter the work, a partaking of the fruits of another's imagination, and always is superior to the vacuous monitoring of your neighbor's exhaust pipe. And then there are the glorious pairings of book and reader—Arlo Guthrie reading Woody's *Bound for Glory*, Lou Diamond Phillips narrating James Fenimore Cooper's *The Last of the Mohicans*.

But once we grant the audio book its attractions, we are still confronted with the question of its *whatness*. This is no mere epiphenomenon; it promises to become a full-fledged trend. As life gets more complex, people are likely to read less and listen more. The medium shapes the message and the message bears directly on who we are; it forms us. Listening is not reading, but what is it?

The origins of literature were, of course, oral. But the storyteller was naturally constrained by the attention of his listeners; thus the tales were often formulaic, and structured to maximize suspense. The written word liberated the writer to pursue non-formulaic incentives. Our more serious literature incorporates levels of difficulty—in narrative sequence, syntax, and linguistic density—and presupposes a reader who is free to hover over a phrase, reach for a dictionary, and dart back. Indeed, modern literature can be plotted along a complexity curve, and past a certain point on that curve the prose is likely to elude even the most dedicated listener. A novel such as E.L. Doctorow's *Ragtime* can be ingested with relative ease, whereas a writer such as Virginia Woolf is likely to flummox a listener. What all this means, of course, is that the limitations of the medium may substantially narrow the spectrum of the literary. Certain works will not circulate within the culture, at least not in spoken form.

Reading, because we control it, is adaptable to our needs and rhythms. We are free to indulge our subjective associative impulse; the term I coin for this is "deep reading." Deep reading is the slow and meditative possession of a book. We don't just read the

words, we dream our lives in their vicinity. Deep listening is rarely an option. Our ear, and with it our whole imaginative apparatus, marches in lockstep to the speaker's baton.

When we read with our eyes, the voice we conjure up is our own—it is the soundprint of the self. Bringing this voice to life via a book is one of the subtler aspects of the reading magic, but hearing a book in the voice of another amounts to a silencing of that self—it is an act of vocal tyranny. With the audio book, everything—pace, timbre, inflection—is determined for the captive listener. The collaborative component is gone; one simply receives.

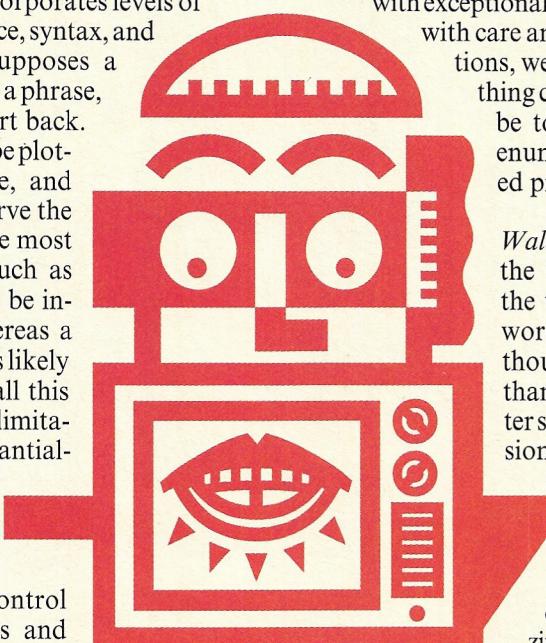
Everything about modern—or is it postmodern?—life carries us away from the state that is propitious for deep reading. The generations now coming up, reared on music and visual media, have reflexes and combinatorial capacities that are something new in the world. They perform acts of multitrack cognitive juggling that leave their elders tied in knots. Multitrack sensibilities will likely be less and less able to perform the single-track tasks demanded by the silent page, so it is not farfetched to suppose that a good part of the future of literature will be bound up with the audio process.

This prospect leaves me feeling strangely divided. As much as it pains my old literary soul to say so, I find that there are many virtues in the listening experience. For one thing, some literary works do play very well in the audio format. Short stories, which tend to be more focused, often work beautifully.

Audio books also remind us of the sound of literature. For unless we are pledged to reading a work with exceptional attentiveness, voicing it inwardly with care and monitoring its slightest inflections, we tend to gulp the words at something close to the speed of garble. It can be tonic to hear well-written prose enunciated, fleshed out to its intended proportions.

Recently, listening to a tape of *Walden*, I had this thought: that in the beginning was the Word—not the written or printed or processed word, but the *spoken* word. And though it changes its aspect faster than any Proteus, hiding now in letter shapes and now in magnetic emulsion, it remains. It still has the power to lay us bare.

—Sven Birkerts
Harper's Magazine



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Computer news and floppy novels

The brave new world of publishing leaves some uneasy

A NEW GENERATION OF TECHNOLOGICAL INVENTIONS—MOST OF THEM INVOLVING some variation on the home computer—is now poised to invade our daily lives. The two most intriguing invaders are electronic newspapers and “hypertext” writing.

Electronic news transmission is, in a small way, already here. Commercial computer network services such as CompuServe and Prodigy now routinely offer on-line news bulletins. So far this hasn’t had much of an impact on the everyday habits of most people—or most newspaper publishers. The big change now being discussed involves the mass production of flat computer screens—the size of a written page—that will in effect be electronic newspapers.

These screens will display a front page with an index. The user can tap a pen to the screen to call up a story, flip a page, turn a still photograph into a TV news scene, or even make a dinner or theater reservation from an ad. The screens will be battery-powered, and the news will be beamed to them from a broadcast satellite or perhaps from digital transmission systems like those that are now being used for cellular telephones.

How long will it be until we start getting the news this way? According to media-technology specialist Roger Fidler, the big transition, which he calls the “mediamorphosis,” is about five years away. More skeptical observers think the technical and economic problems—getting readable flat screens and making such a system competitive with conventional newspapers—will not be solved until after the turn of the century. But nobody is dismissing the idea, and several major news chains are reportedly thinking very hard about how to make the transition into a paper-free future.

Then there’s hypertext. It’s already here, too, in a moderate way. Hypertext is basically a computer software system that makes it possible to create all sorts of linkages and short circuits within a text. Instead of having a single track like an ordinary book, a hypertext file may have any number of different tracks following different themes or structural plans.

Robert Horn, a consultant who specializes in information-design systems for business, says hyper-

text is extremely useful in organizing technical material so that the reader can efficiently decide which parts of a text to read. “Usually you don’t want to read everything—you only want to read what you don’t know,” he points out.

Although hypertext was designed as a way of organizing information, many fiction writers are embracing it as a new art form. Several companies are putting out software for writing hypertext fiction, and creative-writing professors are teaching courses about how to write hypertext novels that literally go in all directions.

Hypertext, like electronic newspapers, is interactive. The reader participates in creating the structure of what is read. In reading a hypertext novel you may follow the point of view of a chosen character, or you may choose the outcome you like best, or you may wander off into subtleties and complexities beyond anything James Joyce could have imagined. The possibilities—and the stories—may be endless.

Although this opens up new realms of choice and creativity, freeing the reader from being merely a passive receptacle, some lovers of the written word fear that we may be looking at the beginning of the end of literature as we have known it.

But the deeper issue here is not flexibility and choice but the role of literature and its cousin journalism as forces of cultural cohesion. Every modern civilization

has its canon of great books that hold its accumulated experience and wisdom. The authors of such books are truly “authorities” who create plot structures that we follow as we read; their worldviews may be adopted by millions of people. Hypertext enables every reader to read a different story and, in a sense, construct a different world.

At another level, the big newspapers are the last of the general-interest print media. Electronic news, however, will permit all kinds of specialization. “People are going to get only the news they want to get—and the view of the world they already have,” Horn predicts.

The proponents of these new tools are understandably enthusiastic. Electronic news could bring a new burst of life into journalism, and hypertext offers great possibilities for education and creativity. But they may bring perplexing new problems for a society that is already hard put to maintain (or even define) its cultural center.

—Walter Truett Anderson
Pacific News Service

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